Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

edge would flow forth in rich, spontaneous utterances, and he was able to throw a peculiar charm around the facts of science. The University of Kansas lately honored herself by placing him upon her corps of special lecturers. He was wholly absorbed in his college duties, and was the student's best friend. He opened doors in the temple of science, and inspired his pupils to enter and explore for themselves. As a friend and companion, he was always true and genial. His friendships were remarkably warm and lasting. He was greatly beloved by all his neighbors, and this is a sure test of a good man. He possessed a native purity and refinement of soul, more akin to the refined nature of woman, which never forsook him in his most social hours. He seemed to be born without fear, and his scientific friends relate instances in their western explorations where he would lie down without fear, and sleep till morning, surrounded by hostile Indians. He possessed great simplicity of life, and always felt as if he was a young man. He was always giving public lectures without compensation, and studying methods of conferring favors upon his friends. He feared God and loved righteousness, and those who knew him best believe that he possessed a deep religious nature.

As long as science has a name and place in the great central plains of the North American continent, Prof. Mudge will not be forgotten as a scientific explorer and discoverer.

METAMORPHIC DEPOSIT IN WOODSON COUNTY.

By Prof. B. F. Mudge, A. M.

Much excitement has existed for a year past in Woodson county, Kansas, in relation to the alleged mines of gold and silver at Belmont. These reports induced me, in June, 1879, to visit the spot, in company with Prof. Hay. We found evidence of metamorphic action which I had never before seen in Kansas, except at the lead mines in the subcarboniferous deposits in the southeastern part of Cherokee county, The area under consideration is in the coal measures, and is nearly one mile long and one-third as wide. This lies in sections 29 and 32, town 26, range 15, east. Outside of this small area, the lime shales and sandstones in all directions remain unaltered. Some twenty shafts have been opened in the vain attempt to find valuable ores. These enabled us to abtain a most accurate knowledge of the metamorphic action. I saw no rock which indicated that the changes observed were caused by the direct action of fire. The moderate metamorphism was, in my estimation, clearly caused by the action of warm mineral salicious waters, and probably under-pressure. The change was most marked on the porous sandstones, and less so on the limestones and clay shales. The vapors and hot waters had expelled a portion of the calcareous material of the limestone, and hardened it, by replacing the lost matter with silica. This destroyed the fossils only in part, but gave it a black, basaltic appearance. The clay shales had assumed a more granular appearance, interspersed with small flakes of mica. We saw over thirty feet of this stratum in several places.

But the most marked metamorphic action was seen in the common sandstone. Its porous character allowed the hot steam and vapor to penetrate freely into all portions of the stratum. At the western portion, near the center of the northwest quarter of section 32, this is seen in blocks of quartzite, about a foot in diameter, and three or four feet long. These lie on the surface, evidently left by the denudation of a portion of the stratum. About a half a mile farther east, where several good-sized shafts are opened, the changes by metamorphic action could be studied in all their details. On the surface were masses of quartz containing clear, glassy crystals, and at one spot quite a number of specimens of beautiful amethyst. This is the first locality of the latter mineral I have found in Kansas.

Here, in a large shaft, about thirty feet deep and nearly as long, can be seen the most varied changes. After penetrating five feet of loose surface material, we have at one edge of the shaft eighteen inches of unaltered red sandstone; below which it is soon altered to a dark-blue chert, and again to pale blue, then cloudy, and finally to a nearly pure white, fine-grained, hard quartzite. In the latter were small spots of carbonate of lime, which could be scratched by the finger-nail. In one side of the shaft, the sandstone assumed the form of bluish-green chert, with small, white spots. This was seen in many of the openings or shafts, and was the rock said to contain the most silver. At a few places the stratum was twisted into small folds, as if the hot water had rendered it plastic, and the pressure had caused it to yield. The colors usually shaded into each other, but sometimes the change was abrupt.

At the deepest shaft, Mr. Van Meter's, the bluish-green chert, or quartzite, is traversed by veins of white quartz, which was said to contain gold; but a portion which I took out did not yield a trace of that metal.

Near the center of the metamorphic area, the strata were dipped as much as 45°. This was undoubtedly caused by the washing out of the underlying stratum, and was very local. At several places we saw sharp, angular fragments of chert, which had become cemented together by the same material. This feature is frequently seen at the lead mines of Cherokee county. In nearly all other respects, the metamorphic action at the two localities are entirely different.

I have caused some of the rock said to yield silver—some specimens given me at the mines, and some that I broke from the ledges and shafts—to be analyzed by Professors Patrick, of the State University, and Failyer, of the State Agricultural College, and no trace of silver, or any metal except iron, was found. I was surprised, when I saw the metamorphic action, not to find any lead, which is usually met with under such circumstances.

I was told at Belmont that assays of rock from these shafts had been made by chemists in Massachusetts and Colorado, and silver had been obtained, varying in amount from $5 per ton to $6.25 per ton. This, it will be seen, is fully equal to the silver mines at Leadville; but, on the other hand, though several thousand dollars have been spent, not a single ounce has been sold as the product of all the mines. This should settle the practical question of the advisability of the enterprise. Whether the ore was "salted" before it started for Massachusetts, or whether the whole story was a fabrication, I do not know.

I have been thus particular in the description of these mines, because I am constantly consulted on similar wild metallic stories about rich deposits in Kansas, and because the metamorphic action indicated a possibility that silver might be found.

A HOLIDAY EXCURSION TO THE BIRTHPLACE OF MONTEZUMA.

Theo. S. Case, Kansas City, Mo.

Before entering upon a description of the ruins of the Pécos pueblo and church, I will say, that notwithstanding the volumes that have been written by the explorers of this central portion of the western hemisphere, descriptive of its past civilization, the vastness and perfection of that civilization have been by no means comprehended. Every day the hardy and venturesome prospectors of New Mexico, who, like the Spaniards of the sixteenth century, are urged on by an ardent quest of precious metals, discover new evidences of the existence, in prehistoric times, of a race of men, who in architecture, agriculture and the working of gold and silver, possessed a degree of knowledge and skill hardly surpassed in any age. The discoveries of these explorers also go far to prove that the land which is now so unproductive was once sufficiently arable and prolific of vegetation to sustain a dense population, and that the various reasons which are proposed by the writers of the present day to account for the abandonment of the country by these people, such as superstitious fear, the persecutions of hostile tribes, etc., are futile and unacceptable. It seems unquestionable that some vast change took place in the geological and physical condition of the country, causing its fountains to dry up, and changing its fertile valleys into arid wastes, thus literally starving the people out, and forcing them to seek new homes. This idea brings to the front the theory of the continent of Atlantis, with more plausibility than almost any other—a theory which, if established, will enable us to account for the migration of ancient peoples from one continent to the other, without taxing our credulity with the extremely doubtful one of the Behring's straits route. But since this route is buried in the mists of ages, possibly as far back as the Miocene period, when man did not exist, so far as we have been able to discover, we need not discuss it; especially when some of the most learned ethnologists, such as Prof. Retzius and Dr. Daniel Wilson, assert and apparently prove that the brachycephalic race can be traced through the Kurile islands and on the continent, from the latitude of Behring's straits, through Oregon, Mexico and Central America, and the whole length of South America, to Patagonia; also, that the mound-builders of the North were certainly of the same cranial type with the ancient Mexicans and Peruvians. The Abbe Brasseur de Bourbourg, after the ablest and most extensive researches, declares that the pre-Aztec Mexicans or Toltecs were a people identical with the mound-builders;